

**COLORADO RIVER RECOVERY PROGRAM
FY-2001 PROPOSED SCOPE OF WORK**

Project No.: CAP-6 OCW

Lead Agency: U.S. Fish and Wildlife Service
Submitted by: Pat Nelson
Address: U.S. Fish and Wildlife Service
P.O. Box 25486, DFC
Denver, CO 80225
Phone: 303-236-2985 Ext 226
FAX: 303-236-0027
E-Mail: Pat_Nelson@fws.gov
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Category:

- ☐ Ongoing project
- ☒ Ongoing-revised project
- ☐ Requested new project
- ☐ Unsolicited proposal

Expected Funding Source:

- ☐ Annual funds
- ☐ Capital funds
- ☒ Other

I. Title of Proposal:

Operation and management of Old Charlie Wash, Leota L-7/7a, and Johnson Bottom

II. Relationship to RIPRAP:

-GENERAL RECOVERY PROGRAM SUPPORT ACTION PLAN
ACTIVITY IV. MANAGE GENETIC INTEGRITY AND AUGMENT OR
RESTORE POPULATIONS (STOCKING ENDANGERED FISHES)
IV.E.2.d. Secure and manage ponds for growout of endangered fishes.
-GREEN RIVER ACTION PLAN: MAINSTEM
ACTIVITY II. RESTORE HABITAT
II.A.1.a. Old Charlie Wash.
II.A.1.a(2) Update management plan.
II.A.1.a(3) Monitor and evaluate success.
ACTIVITY III. REDUCE IMPACTS OF NONNATIVE FISHES

III. Study Background/Rationale:

In 1991, Ed Wick developed a draft issue paper entitled "River Management and Habitat Restoration Strategy", which recommended restoration of floodplain habitats for use by endangered fishes. One specific recommendation was to reconnect Old Charlie Wash (Wood's Bottom) to the Green River for use by endangered fishes. Old Charlie Wash became a pilot site for testing hypotheses on floodplain habitat and razorback restoration. To prepare the site, water inlet and outlet control structures, fish screens, and a fish harvest kettle were installed.

The outlet structure failed during 1994, so results were suspect. During 1995, 631,798 fish (15 species) weighing 22,321 pounds were harvested (adult carp 77% by weight; fathead minnows 71% by number). Twelve adult razorbacks, 28 juvenile razorbacks, and 7 juvenile pikeminnow were also collected. During 1996, 549,032 fish (16 species) weighing 12,578 pounds were harvested (adult carp 75% by weight; fathead minnow 49% by number). Six juvenile pikeminnow and 45 juvenile razorbacks were also collected.

At the July 1, 1998, meeting in Salt Lake City, the Biology Committee discussed options for operation of Old Charlie, and recommended that the operation be based on the magnitude of flows during spring runoff. During years when flows exceed the 14,000 cfs needed to over-top the levees, Old Charlie will operate primarily to rear native and endangered fishes that may have drifted into the site (and to remove nonnative fish during harvest). During years when flows do not exceed 14,000 cfs, Old Charlie will be used primarily to remove nonnative fishes from the Green River system. During low (80% exceedance) flow years, Old Charlie will remain dry (see attached memo). There may be years when the Recovery Program will want to use Old Charlie for growout of hatchery-produced or wild-caught larval/YOY endangered fishes.

During 1997, the manager and staff at the Ouray National Wildlife Refuge agreed to allow levees to be breached at Johnson Bottom and Leota Bottom with the understanding that outlet structures would be installed by the Recovery Program at each of the sites. The Recovery Program agreed because it would benefit the Program to be able to quantify composition and abundance of fish species using the sites; and to have the capability of draining the sites, harvesting all the fishes, and disposing of nonnatives as is done at Old Charlie Wash. Levees were breached at Johnson J-4 and Leota L-7 in March 1998. Construction of the outlet structures for Leota and Johnson began in February/March 1999 and work continued off and on through March 2000. The outlet structures work well; unfortunately, additional earthwork will be necessary to make the sites completely drainable so that all fish can be harvested.

An annual operations and management plan for Johnson and Leota L-7 is currently under development, and the O&M plan for Old Charlie is being revisited.

IV. Study Goals, Objectives, End Product:

1. To provide rearing habitat for larval/YOY razorback suckers.
2. To trap and remove nonnative fishes from the Green River.
3. To grow out hatchery-produced or wild-caught larval or juvenile razorbacks (e.g., in a manner similar to Leota L-10).
4. To enhance wetland health (allowing site to remain dry once every 5 years).

End Product: Tabulation of results.

V. Study Area

- Old Charlie Wash (Green River RM 249.5 to RM 252.5)
- Leota L-7/7a (Green River RM 257 to RM 258.5)
- Johnson Bottom (Green River RM 261 to RM 263)

VI. Study Methods/Approach

Old Charlie Wash:

Years when Jensen peak flows exceed 14,000 cfs

During spring runoff, Old Charlie will be allowed to fill naturally through the outlet structure and over the tops of the levees. The upstream inlet gate will remain closed to prevent sediment inflow and minimize sediment deposition (requested by Refuge Manager). When flows at Jensen have peaked, the outlet gate will be closed.

During periods when flows exceed 14,000 cfs, fish will continue to have free access to the site over the levees. If larval razorbacks are drifting while flows are overtopping the levees, it is expected that some of them will drift into the site. Once flows subside, whatever fishes remain in the site will be trapped.

Under this scenario, Old Charlie will be drained in October. The advantages of draining late in the season are that larval/YOY native and endangered fishes will have had more time to grow, and may become large enough to survive in the river. Also, because water temperatures will be lower in October, young native and endangered fishes will more likely survive draining and harvest.

Draining consists of ensuring the outlet screen is in place (to prevent escapement of fishes), opening the outlet gate, and harvesting all fishes. Fishes will be identified by species, weighed, and counted. Native fishes will be put back into the river; nonnatives will be disposed of at the Uintah County landfill. Data will be tabulated and distributed to Recovery Program participants. To ensure a smooth operation, individuals will be identified who will be responsible for monitoring Jensen flows, opening and closing gates, ensuring screens are in place, harvesting fishes and collecting the data, and taking care of any other problems that may arise (e.g., beaver activity, etc.).

There may be years when the Recovery Program decides to stock Old Charlie with hatchery-produced or wild-caught razorback larvae or juveniles for growout. In these instances, the site would be operated as described above.

Years when Jensen peak flows < 14,000 cfs but > 11,000 cfs

During these years, Old Charlie will be used primarily for nonnative fish removal. Operations will remain the same, except that the site will be drained in July instead of October. Water temperatures are high during July, so any larval/YOY native and endangered fishes captured during harvest may not survive.

Years when Jensen peak flows < 11,000 cfs

Dan Alonso and Dan Schaad would like Old Charlie to remain dry in 1 out of 5 years, to help to renew and maintain the productivity of the soils, and to help to prevent encroachment of cattail and hardstem bullrush (see attached memo). During dry (80% exceedance) years, the gates at Old Charlie will remain closed. Assuming that the structures are leak-proof and that there is no groundwater inflow, water and fish will be prevented from getting into the site.

Leota L-7/7a:

Leota L-7/7a are two units on the much larger ~1,016-acre Leota Bottom that extends from Green River river mile 256 to river mile 261. The Leota Bottom floodplain wetland has been divided into 11 units by cross-levees. Leota L-7 is ~120 acres; L-7a is ~20 acres. Levees were breached at L-7 and L-7a in March 1998. A 350' cut was made at L-7 to allow connection with the river when Jensen flows exceed 15,000 cfs. A 600' cut was made at L-7a so that water would move from the wetland to the river at flows between 15,000 and 20,000 cfs; water would back in from the river when flows exceed 20,000 cfs.

An outlet structure and fish kettle were built in 1999 on the downstream end of L-7a so that the bottomland could be drained and fish harvested. Initial testing of the drain structure revealed uneven bottom topography and resultant dead pools, so additional excavation and possibly laser-leveling will be necessary to make the site completely drainable.

The tentative plan for Leota L-7/7a is to allow it to fill and drain each year in most years. The timing of draining has yet to be determined, but it will likely occur sometime between late summer and late fall. All fish will be harvested during draining; nonnatives will be removed and native and endangered fishes will be put into the river.

There may be occasions when the Recovery Program would like to use Leota L-7/7a for growout of hatchery-produced or wild-caught razorback larvae. Under this scenario (and any other scenario), agreement will need to be reached between the Recovery Program and the ONWR manager and staff.

Johnson Bottom:

Johnson Bottom is a ~146-acre Green River bottomland that extends from river mile 261 to river mile 263. The floodplain wetland has been divided into 4 units by cross-levees (~31-acre J-1; ~41-acre J-2; ~58-acre J-3; ~16-acre J-4). The levee was breached at J-4, the most downstream unit, in March 1998. A 200' levee cut was made to an elevation that would allow connection to the river when Jensen flows exceed 13,000 cfs. An outlet structure and fish kettle were built in 1999 on the river side of J-3 so that the bottomland could be drained and fish harvested. Initial testing of the drain structure revealed uneven bottom topography and resultant dead pools, so additional excavation and possibly laser-leveling will be necessary to make the site completely drainable.

The tentative plan for Johnson is to allow it to fill and drain each year in most years. The timing of draining has yet to be determined, but it will likely occur sometime between late summer and late fall. All fish will be harvested during draining; nonnatives will be removed and native and endangered fishes will be put into the river.

There may be occasions when the Recovery Program would like to use Johnson for growout of hatchery-produced or wild-caught razorback larvae or juveniles. Under this scenario (and any other scenario), agreement will need to be reached between the Recovery Program and the ONWR manager and staff.

All three sites:

Sediment deposition periodically results in blockage of the drainage canals. It is anticipated that, for each of the three sites, the drainage canal from the wetland to the outlet structure will need to be cleaned out approximately once every three years. It is proposed that one site will be done each year, resulting in a three-year rotation for each site.

VII. Task Description and Schedule

Old Charlie Wash

Task 1. Identify individuals responsible for site operation (October 2000).

Task 2. Monitor river forecasts (beginning in February 2001).

If projections are for a dry year (i.e., 80% exceedance flows), then ensure that both inlet and outlet gates are closed and remain closed.

Task 3. Open the outlet gate (~March/April).

If projections are for an average or wet year, then during the onset of spring runoff when Jensen flows approach 3,000 cfs: open outlet gate, ensure screens removed, ensure inlet gate is closed.

Task 4. Close the outlet gate (~late May to early June 2001)

Immediately after peak flow has occurred, close the outlet gate.

Task 5. Open the outlet; harvest the fishes (July or October 2001)

-July if peak flows during runoff were less than 14kcfs.

-October if peak flows were greater than 14kcfs.

Ensure screens are in place, open the outlet gate, and harvest all the fishes. Identify harvested fishes to species, weigh and enumerate, record data. Put native fishes back into the river and dispose of all nonnative fishes at the Uintah County landfill.

Task 6. Tabulate data (numbers and weights by species), distribute to Recovery Program by 12/01.

Leota L-7/7a

The details of the operations and management plan have yet to be worked out. It is anticipated that the site will be managed similarly to Old Charlie Wash. Additional excavation will be necessary to make the site completely drainable.

Johnson Bottom

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VIII. FY 01 Work

-Description of Work

See study methods/approach and task descriptions, above.

-Deliverables

Table of results

-Budget

-Clean sediment from kettles (\$1,300)

-Harvest fish: 13 days/site X 3 sites (\$39,154)

CRFP GS-13, GS-11, GS-9, GS-7, 2XGS-5

-Clerical assistance (\$1,690)

GS-5 plus station overhead

- ONWR assistance \$6K per site X 3 sites (\$18K)
Operation and maintenance of front-end loader (\$250/day) and dump truck (\$250/day) by refuge personnel (WG-10 salary \$18.85 per hour) to remove and transport fish from kettles
- Data tabulation summary and report (\$3,066)
GS-13 for 10 days
- Travel (\$2.5K)
- Supplies (\$1.0K)
- Annual O&M (\$17K for one site)
Excavation, dredging, and cleaning of drainage canal to maintain drainability; 3-year rotation for each of 3 sites

Total = \$83.7K O&M (plus 10% overhead on \$66.7K)

IX. Budget Summary

FY 2001	\$ 83.7K
<u>FY 2002</u>	<u>\$ 83.7K</u>
Total:	\$167.4K (O&M plus 10% overhead on \$133.4K)

Note: Overhead not included

X. Reviewers

Dan Alonso, Dan Schaad, Tim Modde, Tom Pruitt

Signature Lines

Attachment

MEMORANDUM

May 26, 1998

To: Pat Nelson, CRFP

From: Dan Alonso, Refuge Manager, Ouray NWR

Subject: Management of Old Charlie Wash

Thanks for taking the time to meet with me last week regarding the FY 1999 Work Plan for Old Charlie.

As we discussed, the management of Old Charlie centers around the timing of draining, and the need to allow drying at 5 year intervals. Waterfowl and shore birds would benefit most if draining where to occur in late September or early October. I understand that the native endangered fish benefit most by draining in July. As a matter of compromise and perhaps dual benefit to both fish and birds, I am willing to experiment with draining in late August. This is in hopes of attracting some of the early migrants such as teal and some species of shore birds. In the recent past, draining of Old Charlie in July has yielded very little use by waterfowl and shorebirds. With a little orchestrated management this wetland could provide a great deal of habitat for both fish and birds.

Historically many of the Green River bottomlands went dry with the onset of drought periods. Our tendency has been to artificially augment depleting water through the use of pumps. Artificial prolonged inundation promotes the encroachment of undesired cattail and hardstem bulrush. Old Charlie would be a much healthier wetland if allowed to remain dry for at least a one-year period at intervals of one out of every five years. The Refuge supports the drying of Old Charlie at the next onset of a dry period.

In support of the Recovery Programs objectives the Refuge agrees to managing Old Charlie this year as it was last year (draining in July).

I understand you will share this memo with the Biology Committee. If I can be of assistance please do not hesitate to call.

Dan